4. R. S. 59] G.M. P39

# GENERAL AND REVENUE SECRETARIAT.

19 13-14.
( Genl: Misc: )

Present

**File No.** 67-13.

**Serial Nos.** 95 & 265.

## Papers Filed.

*Month* Mar 1914.

SUBJECT.

Purchase & Installation of The Steam Heater at a Cost of Rs 16,500/—

| PREVIOUS REFERENCES. | LATER REFERENCES. |
|---|---|
| G.M 67-13 & 263 & 294 | A & 984-14 & 27 & 13. |

Manjaboy
15-8-14.

GENERAL AND REVENUE SECRETARIAT.

( )

NOTES.

G. Sn File No. 67 of

FILE HEADING.

Reg: No. 2158. 4-3-14. Industries and Commerce

From

The Director of I & C

No. 716 Dated 24.10.13 Received 27.10.13

| Diary No. 2510 | Enclos. 1 | Spare Copies. | Serial No. 9 |
|---|---|---|---|

BRIEF ABSTRACT OF LETTER.

Applies for sanction of Govt to purchase from Glasgow a Steam Boiler with accessories for introducing improved methods of boiling sugar Cane juice and manufacturing high class brown jaggory; and to erect the same erected in a galvanised iron shed at a total cost of Rs 16,500

NOTES AND ORDERS.

1. Subd for orders with Q?

67 of 13 Pbs 41 + 61.

SR BR 1.11.13 Secretary

bm 1.11.13.

2. The Director's proposal may be appro

Notes—First Sheet.

GPB—30,000—12-8-11

[G. R. S. 12]

General and Revenue Secretariat.

Gen File No. 67 of 1913-14

Serial No.

It is in the nature of an experiment in jaggary-making, which it is worth making.

3. In regard to funds there is no specific provision in the current year's budget from which the expenditure can be met.

4. In the forecast of expenditure for the triennium commencing with 1913-14, a non-recurring expenditure of Rs 3,22,000, was proposed for the Dept of Industries & Commerce, & from this sum the cost of the proposed installation should be met.

5 It is not however clear how this promised grant for non-recurring expenditure has been worked into the budget as finally passed.

6. Br to for opinion

CSB
3/11/13

Remis 5-11-13

Subs
4/11/13
SN

7. There is a number of Madras items for which no funds have been provided & sanctions will have to be met from the sanctioned parts by the Economic Conference.

Sdeca

4-XI-13

NOTE—Contn. sheet.

GIE—65,000—17-C12.

General and Revenue Secretariat.

G. R. File No. 67 of 1913-14

Serial No.

8.

The results of working the three jaggery manufacturing plants installed by Mr. Chatterton have been so far disappointing, resulting in heavy loss. It was predicted that under the new system the juice extracted will be much more than in the indigenous method and that the cost of jaggery making will also be much reduced. If these expectations had been fulfilled, the working of the plants might be expected to result in gain the actual result was considerable loss. Of course Mr. Chatterton has given his reasons for the failure & has also stated that during the ensuing season things will be much better. I think it is desirable to see the results of working of the ~~canning~~ season before sinking a further sum of about Rs 16,000 in new experiments. Mr. Chatterton in his letter says "Till we have actually made the experiment it is impossible to say whether the jaggery will be hard enough to suit local conditions." Surely machinery of the type proposed must be working in many places and it is not clear why samples of the "high class brown jaggery" cannot be obtained & the views of the local market ascertained. Then again it is not stated what will be the situation will be if the jaggery manufactured

I do not think any such plant is working in India for making jaggery.

CBS
10/11/13

NOTE—Contn. sheet.

GIP—65,000—17-C-12.

Serial No.

12. Whatever the result of past experiments may be in the matter of jaggery making, there is room for trying new methods also. The old processes must be continued for a year or two till it can be determined what their precise value is.

13. The Director has doubts about the quality of the jaggery turned out by the steam heating process. Unless it solidifies to a reasonable degree, ~~the~~ it is not likely to find a favourable market.

14. The Director of Agr. may be consulted before the proposal is sanctioned.

5/12/13

15. Please consult Director of Agrl. & c

Sub[d]

In personal discussion Mr C told me that he points it thus because he has not actually seen jaggery made by steam heating, but that so far as he can judge he has no reason to fear failure. CSG

NOTE—Contn. sheet.

GPB—65,000—17-6-12.

CSG 5/12/13

General and Revenue Secretariat.

G.R. File No. 67 of 191 3-14

Serial No.

W.O. No 48 of 13
G. of 6-12-13

16. Forwarded to the Director of Agriculture for favour of his opinion.

6.12.13.

Dewanawanaik
Dr Registrar-Ld. Gr. of

17. In my letter No 1200 of the 1st November I have already approached Government for the sanction of the purchase of a steam plant for making jaggery somewhat similar to the one proposed by Mr. Chatterton. I have proposed to instal the plant on an Experimental and Demonstration Farm which it has been proposed to open under the Markanaive Reservoir.

V
2-3 2
Pr

18. The chief difference between the two plants is that Mr. Chatterton proposes as far as I can make out, to utilize one of his present crushing plants (oil engine and 3-roller mill) for expressing the juice the new steam plant being used for the boiling alone; and the other hand I have proposed to utilize steam for the whole

NOTE—Contn. sheet.

GPB—65,000—17-6-12.

Serial No.

process both crushing and boiling. This latter is I may say, the usual method and I believe the one ~~most~~ likely to prove the most economical.

19. The objects of the two plants appear also to be different though by no means opposed. I wish the plant to work off a large amount of cane (from 100 to 150 acres) as economically as possible and so the use of the plant will be subordinated to the object of working a sugar cane farm in an area where labour is scarce, in an economical manner. Mr. Challenor apparently wants the plant for experimental purposes.

20 In my opinion it is very unwise to carry on experimental work with cane supplied by ryots. If failures take place as they are very likely to do at the beginning the ryots ~~are~~ will not be able to understand



GPB—65,000—17-6-12

General and Revenue Secretariat. G. M. File No. 57 of 191 3-1

Serial No.

experimental purposes; ~~that~~ should be one in which a definite approved method should be followed.

21. I believe therefore that before any scheme for the establishment of and testing of a steam jaggory plant is sanctioned the following conditions should be met;- (1) A special farm ~~should~~ under the Agricultural Department should be established for growing the cane, preferably under the Markanam Reservoir (b) the Sugar Engineer to the Government of India should be invited to visit the State and to give expert advice on the spot and (c) the work of milling the cane and making the jaggory should be placed under the Agricultural Department, the Department of Industries and Commerce installing

NOTE—Contn. sheet.

GPB—60,000—7-11-13

Serial No.

the machinery and generally supervising its running.

22. My reasons for the last proposal are I should be fairly obvious. The Department of Industries and Commerce has as far as I am aware no staff thoroughly conversant with jaggery making and no officers who can exercise chemical and other scientific control of the factory. In both these respects the Agricultural Department is sufficiently well equipped.

23. In this connection I wish to protest against the proposal which has been from time to time put forward to divide up the work of the various State agencies into watertight compartments. It seems to me that it will be many years before we shall be sufficiently advanced to lay down fixed boundary lines over which a Government

NOTE—Contn. sheet.

GPB—60,000—7-11-13

G. R. S. 12]

General and Revenue Secretariat.

G. Sec. File No. 37 of 1913-14

Serial No.

department may not step. The only question which we should consider at present is, which department is by the training and experience of its staff best equipped to carry out a certain piece of work in the most efficient manner? I think there can be little doubt that the Agricultural Department is at present the best equipped state agency to carry on the work of jaggery manufacture

Leslie Coleman
11.12.13 Director of Agriculture

24. may this be sent to Branch I for putting up the papers relating to the letter quoted at para 1 of the Director's note above or to state at what stage the proposal is?

25/12/13 25. To Branch I

26. 26/12

The letter referred to by the Dir. of Agr

NOTE—Contn. sheet.

GPB—60,000—7-11-13

General and Revenue Secretariat. | Lyn File No. 67 of 1913-14

Serial No.

in para 17 supra contains a forecast of proposals for the improvement of the Agl Deptt during the next 3 years. The file containing the same was Subd to the Secy on 10.11.13.

Fri 31-13-2
D 3347
Rec

Pass
3.1.14
8
3/1/14

Rm
3/1.

Secy
3/1/14

27 The whole file may be sent up to the Director of Industries for his [illegible] with reference to the opinions [illegible] of the Director of Agriculture

The proposal required has been [illegible] (N.B) ex. [illegible] pages
of the Deptt of Director of the Dr of Agriculture

DM
31/1/14

USB
27/2/14

C.O. No 84-13 25
2.3.14 Forwarded unofficially to the Director of Industries for favour of further opinion in the matter

By order
Sd Rajagopal
Secy to Govt
2/3

NOTE—Contn. sheet.

GPB—60,000—7-11-13

Extract from letter ~~dated~~ No 1200 dated 1st Nov 1913 from the Director of Agriculture in Mysore (re: programme of work to be undertaken during the next three years)

Estt of a steam jaggery plant in connection with the Mairkanve Farm

This farm should be to a large extent devoted to sugar cane growing and jaggery manufacture. The area under cane would be from 100 to 150 acres per year, so it would be necessary to have a power plant to handle the crop especially as the labour question is a difficult one in that particular region. I have been in correspondence with the Honble Francis Watts, Commissioner of Agriculture for the West Indies, where such plants have been in use for making muscavado sugar. I am also in communication with the Sugar Inquirer to the Govt of India and propose setting up a plant on lines similar to the one he is starting this year in the United Provinces. I need hardly point out that the Mysore Deptt of Agriculture with its trained staff and long experience in jaggery manufacture is particularly fitted to carry on this work in a successful manner. The plant itself will cost about Rs 15,000/-, the remainder of the money being required for buildings.

(Provision is made for Rs 40,000/- on account of the steam plant.)

3/2/14

G. R. S. 12]

Reg: No 665-2

(1)

General and Revenue Secretariat.

G. R. File No. 67 of 1913-14

Serial No.

Office of the Director of Industries & Commerce in Mysore.

(29)

V
4/3 W.

With reference to the remarks of the Financial Secretary, I should like to make it perfectly clear that the experiments in progress are of a novel character, and have not been made anywhere else except in the Madras Presidency where I started them just before coming up to Mysore. It is threfore impossible to obtain help or assistance such as is suggested by the Financial Secretary. He states that he considers "the results have been so far disappointing, resulting in a heavy loss". This is a rather narrow view to take of the preliminary work of putting a big industry on a sound basis. In the last few years, the sugar industry in India has lost ground to such an extent that India is now compelled to import sugar to the value of nearly 12 crores of rupees. In the Mysore State, the sugar industry is worth about 80 lakhs of rupees, and the waste of sugar through lack of organisation and through the continued use of primitive methods of extraction amounts to at least 40 lakhs of rupees. It is true that last year we did not make a profit on our experiments, but we demonstrated to the ryots that it was their while to give up milling the cane themselves, and bringing it to a Govt. mill; and they admit that by so doing they have got at least 20 per cent more jaggery than they could have got themselves. It was inevitable that mistakes should have been made, considering that we started work with a totally inexperienced Staff, and the ryots did not fail to take advantage of this inexperience in every possible way. The first season ended last September, and since then the whole problem has been carefully examined, and an attempt made to remedy the obvious defects revealed in the first season's working. The old native system of boiling down the juice has been entirely abandoned, new furnaces have been constructed, and a much more efficient method of evaporation designed. The new arrangements have been tested fairly thoroughly at Haravu, and conclusive evidence obtained that the chief cause of loss last season will be avoided this year. Each plant is capable, with the new arrangements, of manufacturing 150 maunds of jaggery a day, and if we could secure the quantity of cane necessary day by day, we should be able to make a profit of working of at least Rs. 700 a month. It is certain, however that we shall not be able to get regular supplies of cane, and the profit from each installation will be less than this; but we can certainly reckon on making a profit. Last year, we spent nearly Rs. 4,000 on firewood to boil down the juice; this year, we shall not spend a pie, as the new furnaces are capable of evaporating all the juice without any firewood at all. Last year, great trouble was experienced in getting firemen to feed the furnaces, but this year there will only be one-third the number of furnaces, and each one can be fed by a small boy without any trouble whatever. So far these new arrangements have only been tried at Haravu, but they will be worked at Kunigal and Chicksagere as soon as the cane is ready for milling. Last year, we were reproached on all sides with not being

outside

Indian annual

/worth

NOTE—Contn. sheet.

GPB—60,000—7-11-13

Serial No.

able to start milling before the middle of April; this year, when we were ready to start work before the middle of January, there was no cane forthcoming. I am quite confident now, that we have more than justified the expenditure which has been incurred by Government on these experiments, and I am now in a position to ~~confidently~~ recommend our latest arrangements to any person, or group of persons, wishing to improve their methods of milling cane and making it into jaggery.

(30) Dealing with the remarks of the Director of Agriculture, it would appear that he is in favour of manufacturing jaggery by steam heating, and that so far as the technique of the process is concerned, he would simply introduce a steam engine instead of the oil engine which I have proposed to use in these preliminary experiments so as to keep down the capital outlay to the minimum possible. If I were asked to design a plant for the "experimental and demonstration" Farm which apparently the Director of Agriculture wishes to establish under the Harikanave Reservoir, I should take the same view as he has done. But in this case I am merely proposing arrangements to carry the work of improving the sugar industry a stage further. Dr. Coleman truly says that our objects are different, as he wants to start work on what will be considered in this country a very large sugar farm. My object is to devise a process which will enable a large number of small sugar cane growers to get the most out of the cane they grow.

(31) The remarks made by Dr. Coleman in para 20 are not borne out by the experience we have had of working with the plants which have already been established. It is perfectly true that we have great difficulties with the ryots, but these difficulties have not proved insurmountable, and it is likely that they will diminish as time goes on, and the people begin to appreciate the advantages of centralised working. At any rate, if we accept Dr. Coleman's view, nothing will be done till he has established his Demonstration Farm ~~over~~ an area of 150 acres of cane in every year, which will involve the State in an initial capital outlay of at least a lakh of rupees. Dr. Coleman therefore proposes that my experiments should be deferred till (1) a special Farm has been established under the Agricultural Department; and (2) till the sugar Expert of the Government of India has been consulted. Most of Dr. Coleman's remarks are vitiated by the assumption that he and the members of his Staff are the only people in Mysore who have any experience of jaggery boiling. Under the circumstances it is therefore necessary to claim some knowledge of the subject and to clearly state that I am not blindly advising Government in regard to subjects which I have not carefully studied and respecting which I have no practical experience. In regard to the manufacture of jaggery, I should think that by now the members of my Staff have made considerably more jaggery than has ever been made in the Agricultural Department; and as I have given the matter very careful

NOTE—Contn. sheet.

GPB—60,000—7-11-13

G. No 67 of 13-14

(16)

The expenditure so far incurred is fully justified by the results obtained, and if there is any lingering doubt on this point, I shall be only too glad to do anything that is possible to dispel it.

3-3-1914.

V.S.N./-

Director of Industries and Commerce.

G. R. S. 12]

General and Revenue Secretariat.

G. M. File No. 67 of 1913-14

17

| Serial No. | |
|---|---|

may the file be re-submitted to the first member of Council?

SDR 5/3/14

See 7) SDR 5/3

Sub to 1st Member of Council.

I am inclined to think that the expenditure advised by Mr Chatterton may be incurred.

CSJ 19/3/14

14/3/14

Sub to 2nd member of Council.

CSJ 19/3/14

Read 26.3.14

M

I agree. When I last visited Municipal, I found that they were building new furnaces & Municipality ready for burning operations this season. So far as I can learn from our account books & from Mr. Subramanyam, the operations this season are full of promise

Well

26/3

26/3

SDR 26/3

NOTE—Contn. sheet.

G.P.B.—60,000—7-11-13

G. R. S. 12]

General and Revenue Secretariat. File No. 67 of 191

Serial No.

Submitted to the Extraordinary Member of Council.

C&B
30/3/14

The proposals involve an experiment and in Commercial & industrial undertakings nothing can be achieved if one is not prepared for risks. I do see no reason why the proposals shd not receive a trial.

1.4.14

I should be obliged

C&B
3/4/14

Draft Subm^n Note Submitted

Secy (& A)

Dewan

17/4

C&B
20/4/14

9069
21/4/14

NOTE—Contn. sheet.

GPB—60,000—7-11-13

## DRAFT SUBMISSION NOTE.

These papers relate to a proposal made by the Director of Industries & Commerce for the purchase of machinery etc for improving the methods of sugar and jaggory manufacture in the State.

Mr. Chatterton states that the present system of evaporation of the juice in open pans is uneconomical and that by the introduction of steam-heating better results can be achieved and high class brown jaggory can be manufactured. He therefore considers it imperatively necessary to introduce improved methods of evaporation and to this end he proposes for the sanction of Government, after consulting the Special Sugar Expert appointed by the Government of India and manufacturers of sugar apparatus, the purchase of new machinery for manufacturing jaggory and he estimates the total cost of the new installation at Rs16,500. The object of introducing this machinery is to concentrate the whole of the furnace work in a single central boiler and employ the steam generated there for evaporating the juice and it is intended to try this process at one of the three experimental stations now working under his control. Though the Director does not speak with absolute certainty as to whether the jaggory produced by this method will be hard enough to suit the local demand and be favourably received in the market, he has no apprehension that the experiment will be a failure.

(2c

The Financial Secretary states that it is desirable to see the results of the working of the existing installations during this season before sinking a further sum of Rs16,000 in the new experiments and that in the meantime attempts may be made to find out whether the kind of jaggory manufactured will suit local conditions.

Though there is something to be said in favour of the Financial Secretary's view I am of opinion that in view of the importance of placing the sugar industry on a sound basis, experiments must be made, even at some cost, to achieve progress in the industry. The Members of Council are also of the same opinion. I submit that His Highness may graciously accord his sanction to the additional expenditure advised by Mr. Chatterton.

24.4.14.

(21

# *Submitted to His Highness.*

These papers relate to a proposal made by the Director of Industries and Commerce for the purchase of machinery etc., for improving the methods of sugar and jaggory manufacture in the State.

2. Mr. Chatterton states that the present system of evaporation of the juice in open pans is uneconomical and that, by the introduction of steam-heating, better results can be achieved and high class brown jaggory can be manufactured. He therefore considers it imperatively necessary to introduce improved methods of evaporation and to this end he proposes for the sanction of Government, after consulting the Special Sugar Expert appointed by the Government of India and manufacturers of sugar apparatus, the purchase of new machinery for manufacturing jaggory and he estimates the total cost of the new installation at Rs. 16,500. The object of introducing this machinery is to concentrate the whole of the furnace work in a single central boiler and employ the steam generated there for evaporating the juice and it is intended to try this process at one of the three experimental stations now working under his control. Though the Director does not speak with absolute certainty as to whether the jaggory produced by this method will be hard enough to suit the local demand and be favourably received in the market, he has no apprehension that the experiment will be a failure.

3. The Financial Secretary states that it is desirable to see the results of the working of the existing installations during this season before sinking a further sum of Rs. 16,000 in new experiments and that

in the meantime attempts may be made to find out whether the kind of jaggory manufactured will suit local conditions.

4. Though there is something to be said in favour of the Financial Secretary's view , I am of opinion that in view of the importance of placing the sugar industry on a sound basis, experiments must be made, even at some cost, to achieve progress in the industry. The Members of Council are also of the same opinion. I submit that His Highness may graciously accord his sanction to the additional expenditure advised by Mr. Chatterton.

M. Vimalaya -
30th Apr. 1914 -

2510

(2)

**Record of Cases submitted for the Orders of His Highness the Maharaja**

## *Subject.*

Additional expenditure for purchase of machinery , etc., for improving the methods of sugar and jaggery manufacture.

2396
30.4.14

No-898

## *Order.*

~~KRW~~
5/5/14

Secretary
6.5.14 do
Putup draft brief.

2915 27/5/14

1.6.14

8/5/14 8/5

28/10

General and Revenue Secretariat. G. R. File No. 67 of 1913—14

Serial No.

Dfr: Publ

DR 11.5.14 Lee 4 Ent

Issue

Adm 13/5

CBR 15/5/14

Form 57.

265 Govt Procgs Nr G. 9312-5 dated 18th May 1914 to the Dir of I&C, the Comptroller, the Secy Ec. Confce and the Dir of Agriculture.—

Accords sanction to the purchase and installation of the Steam heater recommended by the Dir, at a cost of Rs 16,500/-, necessary provision being made therefor in the ensuing year's budget.

7

NOTE—Contn. sheet.

G.P.B—60,000—7-11-13

GPB—1,000—23-7-13

Encl. /

OFFICE OF THE
DIRECTOR OF INDUSTRIES AND COMMERCE,
"RINGWOOD," HIGH GROUND,

No. 716

*Bangalore*, 24th October ..... 191 3.

DIARY No. 2260.

1913-19 14
SECTION Q. Sc
FILE No. 67 of 13
SERIAL No. 95

FROM

ALFRED CHATTERTON, ESQ., C.I.E.,
*Director of Industries and Commerce in Mysore,*
*Bangalore.*

To

The Secretary to the Government of His Highness the Maharaja of Mysore for Education and Agriculture, Bangalore.

SIR,

In the last paragraph of my letter No. 356 of the 26th August 1913, I stated:-- "I am of opinion that the present system of working "with open fires will have to be given up, and I am endeavouring to pre- "pare plans and estimates for a jaggery factory in which all the evap- "oration is done by means of steam generated by a central boiler". I have now the honour to submit the proposals which I then promised; and, in doing so, it becomes necessary that I should endeavour to make clear exactly the objects which, it is hoped, we shall be able to achieve by the introduction of steam heating.

During last season, the juice was evaporated in open pans, differing but little from those in common use throughout the country. A few experiments were made with series pans, and special grates for burning the megasse were tried. The principal conclusion arrived at during the season's work was the imperative necessity for improved methods of evaporation; and the results of a few experiments we have been able to make with the improved megasse-burning furnaces shewed that, next season, we shall undoubtedly effect a very great improvement in the methods by which we have hitherto burned the megasse. The evaporation, however, in open pans will always require a certain amount of firewood, partly because the method of transferring the heat to the juice is incapable of

of any great improvement in the efficiency; and, secondly, because experience, both in Madras and up here, leads to the conclusion that continuous working with open pans is inadvisable, owing to the difficulty of supervising the work at night. Now, it is very desirable that, if possible, we should secure continuity of work; because, in the first place, the heat losses will be reduced to a minimum, and, secondly, because the output of the plant will be increased at least 50 per cent. The only method which seems to promise any hope of achieving both these results is by the introduction of steam heating. The whole of the furnace work is then concentrated in one steam boiler, and there is no possibility, through carelessness, of seriously injuring the jaggery in the later stages of manufacture by over-heating it. It is practically certain that we ~~should~~ shall be able to manufacture rather high-class, brown jaggery, but whether this jaggery will be favourably received on the market is a matter which requires to be determined. Till we have actually made the experiment, it is impossible to say whether the jaggery will be hard enough to suit local conditions. The proposals now submitted for sanction are the result of discussions with Mr. Hulme, the special Sugar Expert appointed by the Government of India, and Messrs Blair, Campbell & McLean, large manufacturers of sugar apparatus in Glasgow. The cost of the apparatus to be purchased from them amounts to £699-10s-0d, f.a.s. Glasgow. The details of the machinery, and the price of each item, are given in the accompanying specification. It is proposed that this plant should be erected at one of the 3 sugar cane stations, but I have not yet decided at which; that is a point which may well be left open till some experience has been gained with the next season's crop. It will be necessary to establish the plant in a galvanized iron shed with the machines so arranged that the juice can flow by gravity from one vessel to the other. No detailed plan has yet been prepared, nor will it be possible to prepare one; but it is estimated that the cost of buildings and the erection of the machinery will not exceed Rs. 5,000/-. Allowing Rs. 1,000/- for insurance, freight, and duty, the total cost of the proposed plant erected in-situ will come to approximately Rs. 16,500/-, and I would ask Government to

(3)

sanction this amount at an early date, so that the plant may be ordered and brought out to India in time for erection before the end of the next season, so that some preliminary experiments may be made, and any modification that may be necessary introduced, before we start the plant on a complete season's work.

There is no provision in the Budget of the Department of Industries and Commerce from which this expenditure can be met. But I would refer you to my No. 413, dated the 3rd September 1913, in which I have submitted a list of schemes involving additional expenditure, under the three years' programme; and I would request that Government may be pleased to meet this expenditure from the lump sum provision available for "non-recurring expenditure".

I have the honour to be,

Sir,

Your most obedient servant,

Alfred Chatterton

Director of Industries and Commerce.

Estimate for a sugar plant to deal with 15 tons of juice

in 24 hours and make same into jaggery.

---

| | | |
|---|---|---|
| | One Multitubular Steam Boiler, about 4'6" in diameter, x 9ft long, complete with all steam and water fittings, suitable for working at 80 lbs pressure, and having iron work for a specially-designed furnace for burning spent megasse..... | £ 175- 0- 0. |
| (2) | One Direct Acting Steam Driven Feed pump, with tank for above boiler... ... ... ... ... | £ 36- 0- 0. |
| (3) | One Steam pump, having brass fitted pump end to pump juice to sulphuring apparatus... ... ... | £ 26- 0- 0. |
| (4) | Three cast iron eliminators, each of 100 gallons capacity and each with gutter at one end, fitted with seamless copper heating coils, and all mountings, including decanting pipes, and floats, and run-off cocks, also scum plugs... ... ... ... | £ 90- 0- 0. |
| (5) | Two open Steel Evaporating Pans, each of 250 gls. of capacity, fitted with steam coils, and all mountings and fittings... ... ... ... ... ... | £ 120- 0- 0. |
| (6) | One Wetzel Pan with steel trough and copper helical coil having a capacity to strike half ton of Massecuite at a time... ... ... ... ... ... | £ 140- 0- 0. |
| (7) | Countershafting, pulleys, brackets, etc., for above to drive same off one of the mill engines... ... | £ 12-10- 0. |
| (8) | One Steam Driven Pump with pump end brass-fitted, to pump clear juice from scum tanks to eliminators | £ 25- 0- 0. |
| (9) | The Necessary Steam, Exhaust, Drain, Water & Liquor pipes, with cocks, valves, tee-pieces, bends, bolts, nuts, and jointing materials, to connect the foregoing vessels together, and make the foregoing plant complete... ... ... ... ... ... ... | £ 75- 0- 0. |
| | Total... ... ... ... ... ... ... ... | £ 699-10- 0. |

"Copy"

Ezra Gratton

Director.

Compl No 1524/ 1913-14
978-13-10
820/5/14

(13)

Ab

Q. Dn

File No. 62/13

Serial No. 23

*Diary No. of letter replied to* 2810

*Proceedings of the Government of His Highness the Maharaja of Mysore*

GENERAL AND REVENUE SECRETARIAT.

( )

, *the* 191 .

Date of issue 15/7/14.

Signed by

(3)

READ—

Letter No. 716 dated 24th Octr 1913 from the Dirr of I & C in Mysore applying for sanction to purchase from Glasgow a Steam Boiler with accessories for introducing improved methods of boiling ~~the~~ sugar cane juice and manufacturing high class brown jaggery &.

*over.*

SUBJECT.

GPB—50,000—1-12-12

Order thereon No-

Mr Chatterton states that the present system of evaporation of the ~~Sugar~~ cane juice in open pans is uneconomical and that by the introduction of steamheating, better results can be achieved and high class brown jaggery can be manufactured. He therefore considers it imperatively necessary to introduce improved methods of evaporation and to this end, ~~he~~ proposes the ~~manufacture~~ ~~of~~ ~~purchase~~ installation of new machinery for manufacturing jaggery at an estimated Cost of Rs 16,500/- ~~as estimated etc total cost of the new installation at Rs 16,500/-~~

~~In these circumstances~~ ~~a~~ Having regard to the importance of placing the ~~Sugar~~ industry on the State

G.R.S. 27]

GENERAL AND REVENUE SECRETARIAT.

(*Continuation Sheet draft form.*)

(7)

on a sound basis, Govt are pleased to sanction the purchase and installation of the machinery under reference, and to direct that the necessary provn viz Rs 15,000 be made in the budget of the I & C Deptt for 1914-15.

CSB 15/5/14

Asst Secy I & A 13/5

To

The Dir of I & C in Mysore

" Comptroller to Govt thro' Asst II

" Dir of Agriculture in Mysore I.

Secy I.C

DR

BR

GPB—10,000—22-2-11